

WHAT IS CLAIMED IS:

1. A turbine component having a plurality of film-cooling holes formed in a region of the component to be cooled, said cooling holes having specified diameter, each hole at an exit thereof formed with a counter-bore of predetermined depth; said component having a coating applied thereto at least in said region, wherein the counter-bore provides an area for excess coating material to accumulate without reducing the specified diameter.

2. The turbine component of claim 1 wherein, for a specified diameter of about 0.033 inch, the counter-bore has a diameter of about 0.053 inch.

3. The turbine component of claim 2 wherein the counter-bore has a depth of about 0.030 inch.

4. The turbine component of claim 2 wherein said coating comprises a first bondcoat layer and a second thermal barrier coating layer.

5. The turbine component of claim 4 wherein the bondcoat layer is an NiAl-based material.

6. The turbine component of claim 5 wherein the thermal barrier coating layer is a yttria stabilized zirconium material.

7. The turbine component of claim 1 wherein the turbine component comprises a gas turbine bucket having an airfoil portion and a shank portion, and wherein said region comprises the airfoil portion.

8. The turbine component of claim 7 wherein, for a specified diameter of about 0.033 inch, the counter-bore has a diameter of about 0.053 inch; and wherein the counter-bore has a depth of about 0.030 inch.

9. The turbine component of claim 7 wherein said coating comprises a first bondcoat layer and a second thermal barrier coating layer; and wherein the bondcoat layer is an NiAl-based material.

10. A gas turbine bucket having an airfoil portion and a shank portion, said airfoil portion having a plurality of film-cooling holes therein, each hole at an exit thereof formed with a counter-bore of predetermined depth; said component having a coating applied thereto at least in said region, wherein the counter-bore provides an area for excess coating material to accumulate without reducing the specified diameter; and wherein said coating comprises a first bondcoat layer and a second thermal barrier coating layer.

11. The gas turbine bucket of claim 10 wherein the bondcoat layer is an NiAl-based material.

12. The gas turbine bucket of claim 11 wherein the thermal barrier coating layer is a yttria-stabilized zirconium layer.

13. A method of maintaining cooling efficiency of film-cooling holes in a turbine component where the film-cooling holes have specified diameters and the turbine component has a protective coating therein comprising:

a) before coating, forming each film-cooling hole with a counter-bore and an exit end of the film-cooling hole; and

b) spraying the coating onto the turbine component at least in areas surrounding the film-cooling holes such that excess coating material accumulates in the counter-bore without reducing the specified diameter of the cooling holes.